

Listing of the Claims

1. (Currently Amended) A diagnostic imaging system comprising:
a means ~~(30)~~ for supporting a subject;
a means ~~(32)~~ for translating the supporting means ~~(30)~~ through an examination region ~~(20)~~;
an x-ray source ~~(16)~~;
a means ~~(78)~~ for rotating the x-ray source ~~(16)~~ around the examination region ~~(20)~~;
a means ~~(74)~~ for controlling the x-ray source ~~(16)~~ to pulse the x-ray source ~~(16)~~ at a selected angular location around the subject to transmit radiation through the subject as the subject is translated through the examination region ~~(20)~~;
a means ~~(22)~~ for detecting transmitted radiation, which has passed through the subject; and
a means ~~(54)~~ for reconstructing a pilot scan of the subject from the radiation detected when the x-ray source ~~(16)~~ was pulsed at the selected angular location as the subject was translated through the examination region ~~(20)~~.
2. (Currently Amended) The diagnostic imaging system as set forth in claim 1, wherein the radiation controlling means ~~(74)~~ includes an x-ray source controller ~~(76)~~.
3. (Currently Amended) The diagnostic imaging system as set forth in claim 1, further including:
a couch motor control ~~(80)~~ in an operative connection with the translating means ~~(32)~~ to operate the subject supporting means ~~(30)~~ at a selected speed.

4. (Currently Amended) The diagnostic imaging system as set forth in claim 3, further including:

a system controller ~~(42)~~ which controls:

the x-ray source controller ~~(74)~~ to pulse the radiation by the x-ray source ~~(16)~~ at the selected angular orientation, and

the couch motor control ~~(80)~~ to translate the subject through the examination region ~~(20)~~ in coordination with pulsing of the x-ray tube ~~(16)~~.

5. (Currently Amended) The diagnostic imaging system as set forth in claim 4, wherein the system controller ~~(42)~~ and the x-ray source controller ~~(76)~~ cause the x-ray source ~~(16)~~ to pulse at least one of 6 and 12 o'clock in each revolution.

6. (Original) The diagnostic imaging system as set forth in claim 5, wherein the radiation is pulsed at both 6 and 12 o'clock.

7. (Currently Amended) The diagnostic imaging system as set forth in claim 4, wherein the x-ray radiation source controller ~~(76)~~ pulses the radiation source ~~(16)~~ at a plurality of the selected angular locations in each revolution.

8. (Original) The diagnostic imaging system as set forth in claim 7, wherein the angular locations are fixed every 9 degrees of rotation.

9. (Currently Amended) The diagnostic imaging system as set forth in claim 7 further including:

a means ~~(90)~~ for calculating subject contour.

10. (Currently Amended) The diagnostic imaging system as set forth in claim 9, wherein the transmitted radiation received by the detection means ~~(22)~~ is indicative of an attenuation of the radiation and further including:

a means ~~(64)~~ for determining a radiation dose, the radiation dose being determined based on an attenuation data and subject contour.

11. (Currently Amended) The diagnostic imaging system as set forth in claim 10, further including:

a means ~~(62)~~ for converting the dose calculations into parameters for a computed tomography scan.

12. (Currently Amended) The diagnostic imaging system as set forth in claim 1, further including:

stationery gantry ~~(12)~~ defining the subject receiving examination region ~~(20)~~;
rotating gantry ~~(22)~~ which rotates about the examination region ~~(20)~~; and
one of air bearings and magnetic bearings for supporting the rotating gantry ~~(22)~~ in the stationery gantry ~~(12)~~.

13. (Currently Amended) A method for generating a pilot scan, the method comprising:

supporting and translating a subject support ~~(30)~~ through an examination region;
rotating a source ~~(16)~~ of an x-ray radiation around the examination region;
controlling the x-ray source to pulse the x-ray source at a selected angular location around the subject support to transmit radiation through the subject as the subject is translated through the examination region;
detecting transmitted radiation, which has passed through the subject; and
reconstructing a pilot scan of the subject from the radiation detected when the x-ray source was pulsed at the selected angular location as the subject was translated through the examination region.

14. (Original) The method as set forth in claim 13, further including:
controlling a position and movement of the subject support to operate the subject
support at a selected speed and orientation.

15. (Original) The method as set forth in claim 13, further including:
rotating an x-ray source at a selected speed;
pulsing an x-ray to pass on the radiation through the examination region as the
x-ray source rotates through the selected angular location; and,
moving a subject support in coordinating with the rotating and pulsing of the x-
ray source.

16. (Original) The method as set forth in claim 15, further including:
pulsing the x-ray source at least at one of 6 and 12 o'clock in each revolution.

17. (Original) The method as set forth in claim 16, further including:
pulsing the x-ray source at each of 6 and 12 o'clock in each revolution.

18. (Original) The method as set forth in claim 16, further including:
pulsing the x-ray source at a plurality of the selected angular locations in each
revolution.

19. (Original) The method as set forth in claim 18, wherein the angular
locations are fixed every 9 degrees of rotation.

20. (Original) The method as set forth in claim 18, further including:
calculating a subject contour.

21. (Original) The method as set forth in claim 20, wherein the subject has a non-uniform geometry and further including:

collecting an attenuation data to produce a subject absorption contour; and
determining an optimal radiation dose based on the attenuation data and subject contour to obtain a constant quality image.